
Antimycotic ciclopirox olamine in the diabetic environment promotes angiogenesis and enhances wound healing.

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Public Summary:

Diabetic wounds remain a major medical challenge with often disappointing outcomes despite the best available care. An impaired response to tissue hypoxia and insufficient angiogenesis are major factors responsible for poor healing in diabetic wounds. Here we show that the antimycotic drug ciclopirox olamine (CPX) can induce therapeutic angiogenesis in diabetic wounds. Treatment with CPX in vitro led to upregulation of multiple angiogenic genes and increased availability of HIF-1 α . Using an excisional wound splinting model in diabetic mice, we showed that serial topical treatment with CPX enhanced wound healing compared to vehicle control treatment, with significantly accelerated wound closure, increased angiogenesis, and increased dermal cellularity. These findings offer a promising new topical pharmacologic therapy for the treatment of diabetic wounds.

Scientific Abstract:

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